

## Book Reviews

**CLINICAL ANAESTHESIA IN NEUROSURGERY.** 1984. Edited by Elizabeth A.M. Frost. Published by Butterworth Publishers. Stoneham, MA. 480 pages. \$65 Cdn. approx.

This book is a recent addition to the neuroanaesthetic literature. In 480 pages the authors, under the editorship of the well-known American neuroanaesthesiologist, E.A.M. Frost, attempt to cover all aspects of neuroanaesthesia and neurosurgical intensive care. In part they succeed.

Following a witty and perceptive foreword which charts the history of neuroanaesthesia, the book is divided into five major sections. These are: a review of cerebral physiology, descriptive chapters of neurosurgical procedures, the management of central nervous system trauma, intensive care, and finally, cerebral death.

We are uncertain as to whom this book is directed. If it is directed at practising neuroanaesthetists, why are the major chapters concerning anaesthesia written by a neurosurgeon? It is unfortunate that this editorial decision is compounded by factual errors. For example, the assertion is made that topical anaesthesia to the larynx will "prevent bucking during insertion of the pinhead holder". Additionally, a recommendation is made against the use of precurarisation before the use of succinylcholine because of "marked immediate potentiation of neuromuscular blockade". If the book is directed at practising neurosurgeons, then it provides a useful summary. If the book is directed at departmental libraries, then it fails because the references are incomplete and not current, even allowing for publication time.

Despite these problems, certain chapters are excellent. Those on spinal cord trauma, peripheral nerve surgery and postoperative intensive care are comprehensive and well written. Unfortunately, other chapters suffer in comparison. That on posterior cranial fossa surgery focuses almost exclusively on procedures done with the patient in the sitting position. There is no discussion of determination of surgical position. The chapter on pediatric neurosurgery attempts to review all commonly performed procedures in a manner more suited to a manual of anaesthetic techniques.

"Just as there is no standard central nervous system lesion, there is no single best choice in neuroanaesthesia." Unfortunately the same can be said for neuroanaesthesia textbooks. We cannot recommend this book as the basic text for anaesthesia residents. However, neurologist and neurosurgeons interested in neuroanaesthesia will find the book of use.

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**THE NEUROMUSCULAR JUNCTION.** 1984. Edited by Brumback and Gerst. Published by Futura Publishing Company, Mount Kisco, New York. 354 pages. \$49 Cdn. approx.

Some may find it difficult to understand how 354 pages can be devoted to a review of the neuromuscular junction itself. However, a brief inspection of this book will illustrate the complexities of neuromuscular structure, function and pathology that are current and important. This multi-authored volume reviews in depth the anatomy, physiology and pharmacology of the end plate and relates these to the pathological processes affecting the structure.

An interesting historical review of the development of knowledge of the neuromuscular junction leads off, followed by detailed and well illustrated studies of the light and electron-microscopic features of the end plate. Very detailed descriptions of current information and hypotheses of how neuromuscular transmission occurs are provided in the chapters on physiology and pharmacology. There are full descriptions of how the cholinesterases, depolarizing and non-depolarizing drugs and anticholinesterases act at the end plate.

There is a chapter on the effects of nerve injury that seems a little out of place in a review of the neuromuscular junction. It is more concerned with the effects of denervation on muscle function than on the end plate.

Finally are the two chapters dealing with clinical disorders of neuromuscular function. There is a detailed discussion of myasthenia gravis by Donald Sanders which covers the pathogenesis, clinical diagnostic features and management of the disorder fully and accurately. Not quite so successful is the chapter on miscellaneous neuromuscular disorders. It describes other diseases of the neuromuscular junction (myasthenic syndrome, congenital myasthenia and botulism) and then rather loosely includes a good deal of information on drugs, toxins and venoms that remain to be better defined in the light of our newer knowledge and ability to understand altered neuromuscular function.

This book is a comprehensive, very detailed and thorough look at the mammalian neuromuscular junction. It will be used mainly as a reference source for a basic understanding of the structure and function of the end plate. It will appeal particularly to pharmacologists and physiologists, but should be familiar territory for anaesthetists and clinicians dealing with neuromuscular disorders.

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**THE SUBCORTICAL REGULATORY MOTOR SYSTEM IN DEVELOPMENT AND ITS DISORDERS.** 1980. By Ivan Lesný. Published by Acta Universitatis Carolinae, Medical Monograph 96. Univerzita Karlova, Prague, Czechoslovakia. 74 pages. \$8 Cdn. approx.

Professor Ivan Lesný, of the Charles University Medical School in Prague, Czechoslovakia, is one of the foremost elder paediatric neurologists in Europe and one of a very few from an eastern European country who has been an unofficial liason with the western world. He was a special guest at the 1984 meeting of the Canadian Association of Child Neurologists in Edmonton and was there acclaimed an honorary member of the Association.

This little monograph is a summary of Professor Lesný's original contributions to an understanding of motor function in infancy through his personal clinical observations and analyses over the past 40 years. While one might question the bases for some interpretations, it is extremely refreshing to consider other explanations which, although they may represent a dogma in eastern Europe, are at least a different dogma than our own western assumptions and allow us to think about the meaning of observations from a different perspective.

The observations themselves are now generally accepted as valid and reproducible in all parts of the world, but many

reflexes are elicited differently in Czechoslovakia than in North America. For example, the Moro reflex is generally produced in neonates by a "swift removal of the base" or by "compression of the epigastrium" rather than by rapidly letting the head drop. A number of terms related to motility, most of which are unfamiliar to most western educated neurologists, are defined; examples include "dromokinetic", "kratikinetic", and "holokinetic".

Lesný describes several syndromes of dyskinesia in childhood, and his strong belief in the importance of the corpus striatum at all ages is emphasized. Some diseases considered rare in Canada apparently are much more common in Czechoslovakia, including ataxia-telangiectasia, a form of dystonia known as "lordotic dysbasia", and Hallervorden-Spatz disease. Lesný states that 20 to 30 percent of all cases of "infantile cerebral paralysis" in Czechoslovakia are dyskinetic forms.

The main purpose of this brief monograph, however, was to emphasize the crucial role of subcortical motor systems in the ontogenesis of motor control in the developing child, parallel to the concepts of the late Professor Derek Denny-Brown of Boston. The hypothetical or interpretative part of the text may best be conveyed by a few short quotations from Professor Lesný's concluding statement: "Basal ganglia do not exist as a functional organ. They are a fiction constructed by anatomists . . . Extra-cortical grey is a part of a large subcortical regulatory motor servosystem. . . In functional ontogenesis there develops the subcortical sensorimotor system most probably by the method of 'trial connections' . . .".

I found Professor Lesný's concepts provocative and refreshing, although admittedly largely speculative. I would recommend this small paperback to those interested in the conceptual foundations of motor integration in development, but I must caution that disappointment may be in store for those with expectations of a critical discussion of modern electrophysiological data. Although written in English (a translation from Czech), it is published in Prague and may be difficult to locate in North America. It may be ordered directly from the publisher: Univerzita Karlova, Ovocný trh 3, 116 36 Praha 1, Czechoslovakia.

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**THE OLIVOPONTOCEREBELLAR ATROPHIES.** 1st edition, vol 41, *Advances in Neurology*. Edited by Roger C. Duvoisin and Andreas Plaitakis. Published by Raven Press. 286 pages. \$59 Cdn. approx.

Research in the olivopontocerebellar atrophies has increased considerably in the last few years, most notably with the discovery of glutamate dehydrogenase deficiency in one variety. The preface of this latest addition to the *Advances in Neurology* Series informs us that "in this volume, the OPCAs are critically assessed with regard to their clinical, pathological, radiological and physiological characteristics in light of new knowledge". Most of the editors' goals are accomplished although the volume does suffer from the problems inherent in any multi-authored text. There is a great deal of controversy as to how to classify this group of disorders in view of their wide ranging clinical and pathological heterogeneity. This confusion is further aggravated by the lack of uniformity seen in multi-authored texts. Some authors prefer to include or exclude certain disorders and others do the opposite. We, therefore see both ends of the lumpers-splitter spectrum here. It could be argued that one possible example of excessive lumping might be the inclusion of a chapter on Joseph disease by Rosenberg and another dealing with a

"dominantly inherited ataxia with abnormal urinary glycolipid content" by Berenberg et al (without CT or pathological evidence for this being an OPCA).

Chapters on neuropathology and CT scan abnormalities are quite useful and informative. It is difficult to evaluate the importance of much of the physiological data presented by Narabayashi since most of this is based on experience with one patient. The concept of the inverse relationship between cerebellar and extrapyramidal features (the latter masking the former) is supported by his electrophysiological study. However, this is not a universal pattern of progression in all patients and so generalizations from this data may not be appropriate.

Disorders of ocular motility and autonomic dysfunction are dealt with in some detail. In the case of the latter, the multiple-author problem again becomes apparent. Chokroverty distinguishes Shy-Drager syndrome from the OPCAs emphasizing that it is a distinct disorder rather than one end of a spectrum. Other authors in the text seem to prefer the concept of "multiple system atrophies" instead. It is not clear whether the other authors mean the Shy-Drager syndrome when they are discussing OPCAs with autonomic dysfunction. To Chokroverty these seem to be two different things.

Chapters dealing with pharmacology and biochemistry are interesting. Perry has divided five different pedigrees of OPCAs into four disorders based on alterations in the levels of GABA, glutamate, aspartate, and taurine in various regions of the central nervous system. In view of the neuropathological heterogeneity of these disorders, it is unclear at present how useful this type of biochemical classification will be. As mentioned, one of the main driving forces for the production of this text was the discovery of glutamate dehydrogenase deficiency in one form of OPCA. Discussions by Plaitakis and Duvoisin, and Chokroverty provide a good review of the clinical, biochemical and possible pathophysiological aspects of this disorder.

This text will appeal to neuroscientists with a broad range of interests. Overall, it does add some useful information to the increasing literature dealing with this group of "degenerative" neurological disorders. The lack of uniform clinical and even neuropathological features in the OPCAs result in this volume suffering, possibly more than most, from the pitfalls inherent in a multi-authored text.

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**ELECTROCLINICAL FEATURES OF THE PSYCHOMOTOR SEIZURE.** 1983. By Heinz Gregor Wieser. Published by Gustav Fischer / Butterworths, Stuttgart / New York. 242 pages.

The medical and surgical therapy of psychomotor (complex partial) seizures remains imperfect. The neuronal substrates of ictal phenomena such as automatisms, autonomic manifestations, and psychosensory and effective auras are poorly understood. Detailed electroclinical studies of psychomotor seizures are required to understand their pathophysiology, improve localization techniques and rationalize therapy.

Wieser's monograph is an important contribution to this problem. The clinical features of seizures in 29 patients were meticulously analysed and correlated with the presence of ictal activity using an array of depth electrodes. This work was complemented by a further study of the effect of electrical stimulation, via depth electrodes, in a series of 31 patients. The